Hartlib

BOUND BY SANGORSKI & SUTCLIFFE, LONDON

Glory to God on high, on Earth, peace, good will amongst men.

A Rare and New

DISCOVERY

OF

A ſpeedy way, and eaſie means, found out by a young Lady in *England*, ſhe having made full proofe thereof in *May*, *Anno* 1652.

For the feeding of Silk-worms in the Woods, on the Mulberry-Tree-leaves in *Virginia*: Who after fourty dayes time preſent there moſt rich golden-coloured ſilken Fleece, to the inſtant wonderfull enriching of all the Planters there, requiring from them neither coſt, labour, or hindrance in any of their other employments whatſoever.

And alſo to the good hopes that the Indians, Seeing and finding that there is neither Art, Skill or Pains in the thing: they will readily ſet upon it, being by the benefit thereof inabled to buy of the Engliſh (in way of Truck for their Silk-bottomes) all thoſe things that they moſt deſire.

So that not only their Civilizing will follow, thereupon, but by the infinite mercie of God, their Converſion to the Chriſtian Faith, the Glory of our Nation, which is the daily humble prayer

OF

VIRGINIA for VIRGINIA.

With two Propoſitions tending to *England*'s and the *Colonies* infinite advantage.

To the Reader.

Ingennous Reader,

I Have in my Legacie of Husbandry bequeathed something unto thee concerning Silk-worms, which hath wakened many to search after the means to advance that part of Husbandry. But because the Letter of K. *Iames* to the Lords Lieutenants of the severall Shires of *England*, for the increasing of Mulberry-Trees, and the breeding of Silk-worms for the making of Silk in this Nation had not annexed unto them in that Treatise the Instructions tending to that purpose, and being but few, wholly out of print, and very much desired: I thought good upon the occasion of the printing of this Letter to those of *Virginia*, to publish it also for the benefit of those who shall be willing to employ themselves in this way of industry, which seemeth to be brought unto a more perfect and speedy accomplishment then heretofore hath been known either here or in *France*, as by the contents of this adjoyned Letter (wherein the Experiment of a vertuous Lady of this Nation for the breeding of Silk-worms is addressed unto the Planters of *Virginia*) is set forth to encourage both them and others to set upon this work, to benefit themselves and the Nation thereby. And truly the Gentleman who doth addresse this Letter to the Planters of the Virginian Colonie is much to be commended for his affection to the publique, because he doth not conceal (as some Muck-worms do for private ends) the Advantages which may be reaped by singular industrious Attempts or Experiments of profit, but desires the benefit of others, even of all to be encreased. And it were to be wished, that every one to whom God (from whom comes every good and perfect gift) doth impart any rare and profitable Secret of Industry, would open himselfe towards his Brethren, as this Publick-hearted Gentleman doth; then would all hands be set a work, and every one would become instrumentall to serve himselfe and his Neighbours in Love, and overcome the burthen of povertie, which for want of employment and decay of Trade doth lie so heavie upon very many, whose burthens might be either born, or made easie, if all the gifts of God were made use of for the end for which he doth bestow them, namely, to profit withall towards others, as it becommeth the Members of the same Christian, and Humane, and Nationall Society; for the same rule holds in all these respects among such as understand what it is to be a good Commonwealths-man in the State, as well as in the Communion of Saints: And to this good and generous inclination, which I wish may more and more abound in them with the grace of God, I shall leave thee and rest,

Thy most assured and faithfull servant,

Samuel Hartlib.

Instructions for the increase and planting of Mulberry-trees.

What ground is fit for the Mulberry-seeds, *how the same is to be ordered, and in what sort the seeds are to be sowed therein.*

THe ground which ought to be appointed for this purpose, besides the naturall goodness of it, must be reasonably well dunged, and withall so situated, as that the heat of the Sun may cherish it, and the nipping blasts of either the North winde or the East, may not annoy it: the choice thereof thus made; that the seeds may the better prosper, and come up after they be sown, you shall dig it two foot deep, breaking the clods as small as may be, and afterward you shall divide the same into severall Beds of not above five foot in breadth, so that you shall not need to indanger the plants by treading upon them, when either you water or weed them.

The Mulberry seeds you shall lay in water for the space of 22 houres, & after that you shall dry them again half dry, or somwhat more, that when you sowe them they may not cleave together: Thus done, you must cast them upon the foresaid Beds, not altogether so thick as you use to do other garden Seeds, and then cover them with some fine earth (past through a Sive) about half an inch thick. In dry weather you shall water them every two dayes at the fartheſt, as likewise the Plants that shall come of them; and keep them as clean from weeds as possibly you can.

The time in which you ought to sowe them for your best advantage, is either in *March*, *April*, or *May*, when frosts are either altogether past, or at the least not so sharp, or of so long continuance, as to indanger their upspring.

There is yet another way to sowe them, and that is as followeth: you shall (being directed by a strait line) make certain furrows in the Beds above mentioned of some foure fingers deep, and about a foot in distance the one from the other: After this, you shall open the earth with your hands, on either side of the aforesaid furrows, some two fingers from the bottom, and where you have so opened it, shall you sowe your seeds; and then cover them half a finger thick with the earth which before you opened.

When

When the Plants that are sprung up of the Seeds, are to be removed, and how they are to be planted the first time.

IN the moneths of *September*, *October*, *November*, *December*, *March* or *April*, the next yeer after the Seeds are sown, you may remove their plants, (or in the moneth of *January*, if it be not in frosty weather) & set them in the like Beds as before, & about one foot the one from the other, but first you must cut off their roots about eight inches in length, & their tops about half a foot above their roots, more or lesse, according to the strength of the said plants, for the weaker they be the lesse tops you shall leave them. In this sort you may suffer them to remain weeding and watering them as need shall require) till they be grown six foot in length above their roots, whereunto when once they have attained, you may cut their tops, and suffer them to spread, alwayes having a care to take away the many branches or succours, that may any way hinder their growth, untill they be come to their full length of six foot, as aforesaid

When, and how the Plants are to be removed the second time, and in what manner they are to be planted where they shall remain.

IN the moneths aforesaid, (according as your plants are waxen strong,) you may remove them either into the hedges of your fields, or into any other grounds. If in hedges, you must set them 16 foot the one from the other, if in other ground, intending to make a Wood of them 18 foot at the least. But a moneth before you do remove them, you must make the holes (wherein you purpose to set them) about four foot in breadth, and so deep as that their roots may be well covered, and some half a foot of loose earth left under them, having alwayes a special care so to place them, that they may receive the benefit of the Sun, and not to be shadowed or overspread by any neighbouring trees.

When, and how the Eggs of the Silk-wormes are to be hatched, and how to order the Wormes that shall come of them.

WHen the leaves of Mulbery-trees begin a little to bud forth, take the eggs of your Silk-worms, and lay them in a piece of Say, or such like stuff, and in the day time carry them in some warm place about you, in a little safe box, but in the night either lay them in your bed or between two warm pillows, untill such time as the Wormes begin to come forth: then take a piece of paper of the wideness of the said box, and

and having cut it full of ſmall holes, lay it vvithin the ſame upon the eggs, and upon that again ſome fevv Mulbery-leaves, to vvhich the Wormes as they are hatched, vvill continually come. Theſe leaves vvith the Wormes upon them, you muſt ſtill remove into other boxes, laying freſh leaves as vvel on thoſe that are removed as on the paper vvhere the eggs are; and this is the courſe vvhich muſt be duly kept and obſerved, untill ſuch times as all the Wormes be come forth of their ſhels, ſtill keeping their boxes vvarm, as aforeſaid; but no longer about you, but untill the Wormes begin to come forth, out of vvhich boxes you may ſafely take them, vvhen once they have paſt their ſecond ſickneſſe, and feed them upon ſhelves of tvvo foot in breadth, and 18 inches one above the other.

The ſaid ſhelves are not to be placed in any ground-room, nor yet next unto the tiles, but in ſome middle room of your houſe which openeth upon the North and South, that you may the more conveniently give them either heat or aire, according as the time and ſeaſon ſhall require. Beſides you muſt not make them cloſe unto the Wals, but ſo as you may paſſe about them the better to look unto the Wormes, and keep them from Rats and Mice, which otherwiſe might devoure them. You muſt obſerve the times of their comming forth, and keep every one or two dayes hatching by themſelves, that you may the better underſtand their ſeverall ſickneſſes or ſleepings, which are foure in the time of their feeding. The firſt commonly ſome twelve dayes after they are hatched, and from that time at the end of every eight dayes, according to the weather, and their good or ill uſage, during which time of every ſickneſſe, which laſteth two or three dayes, you muſt feed them but very little, as onely to relieve ſuch of them, as ſhall have paſt their ſickneſſe before the reſt, and thoſe that ſhall not fall into their ſickneſſe ſo ſoon.

The whole time that the Worms do feed, is about nine Weeks, whereof untill they come unto their firſt ſickneſſe, give them young Mulbery-leaves twice every day, but few at a time; from thence untill their ſecond ſickneſſe, twice every day in greater quantity; and ſo from their ſecond to their third ſickneſſe, increaſing the quantity of the leaves, according as you perceive the Wormes to grow in ſtrength, and clear of ſickneſſe: from the third untill their fourth ſickneſſe, you may give them leaves thrice every day, and the fourth being paſt, you may let them have ſo many as they will eat, alwayes having a care that you give them none, but ſuch as are dry, and well aired upon a Table or cloth, before they be laid upon them, and withall gathered ſo neere as may be; at ſuch times as either the Sun or Winde hath cleared them of the dew that falleth upon them.

For

For the feeding of Worms you need obſerve no other order then this, lay the Mulbery-leaves upon them, and every two or three dayes remove them, and make clean their boxes, or ſhelves, unleſſe in times of their ſickneſſe, for then they are not to be touched: the leaves which you take from them when you give them freſh to feed upon, you muſt lay in ſome convenient place, and upon them a few new leaves, to which the Worms that lay hidden in the old, will come, and then you may paſſe them with the ſaid new leaves to the reſt of the Wormes: And now leſt any thing ſhould be omitted, which ſerves to perfect the diſcovery of ſo excellent a benefit, I will adviſe you to be very diligent in keeping clean their Boxes, or ſhelves, as being a ſpeciall means whereby to preſerve them; wherefore when you intend to do it, you ſhal remove them together with the uppermoſt leaves whereon they lie, unto other boxes or ſhelves, for with your hands you may not touch them, till they have throughly undergone their third ſickneſſe, and then may you paſſe them gently with clean hands, without doing them any harm: provided that the party that commeth neer them ſmell not of Garlick, Onions, or the like. The firſt five weeks of their age you muſt be very carefull to keep them warm, and in time of rain or cold weather, to ſet in the room where they remain, a pan with coals burning in it, now and then ſome Juniper, Benjamin, and ſuch like, that yieldeth ſweet ſmels. But afterwards unleſſe in time of extraordinary cold, give them aire, & take heed of keeping them too hot, being alwayes mindefull to ſtore the room with herbs and flowers which are delightfull and pleaſing to the ſmell. As the wormes increaſe in bigneſſe, you ſhall diſperſe them abroad upon more boards, or ſhelves, and not ſuffer them to lie too thick together, and if you finde any of them broken, or of a yellow gliſtering colour inclining to ſickneſſe, caſt them away, leſt they infect the reſt, and ſort ſuch as are not ſick, the greateſt and ſtrongeſt by themſelves, for ſo the leſſer will proſper the better.

When and how to make fit roomes for the wormes to work their bottoms of ſilk in, & in what ſort the ſaid bottoms are to be uſed.

AS ſoon as by the clear amber-coloured bodies of your worms, you ſhall perceive them ready to give their ſilk, you muſt (with heath made very clean, or with the branches of Roſemary, the ſtalkes of Lavender, or ſuch like) make Arches between the foreſaid ſhelves.

Upon the branches and ſprigs whereof, the wormes will faſten themſelves, and make their bottomes, which in fourteen dayes after the worm beginneth to work them, you may take away; and thoſe which you are minded to uſe for the beſt ſilk, you muſt either preſently winde, or kill

the

theworms which are within them, by laying the said bottoms two or three dayes in the Sunne, or in some Oven after the bread baked therein is taken out, and the fierceneſſe of the heat is alaid. The other bottomes which you intend to keep for ſeed, you muſt lay in ſome convenient warme place, untill the wormes come forth, which is commonly ſome ſixteene or twenty dayes from the beginning of their work: and as they do come forth you muſt put them together upon ſome piece of old Say, Grogeran, the backſide of old Velvet, or the like, made faſt againſt ſome Wall, or hangings in your houſe.

There they will ingender, and the Male having ſpent himſelfe, falleth downe, and in ſhort time after dieth, as alſo doth the Female when ſhe hath laid her egges, Which egges, when you perceive them upon the Say or Grogeran, &c. to be of a grayiſh colour, you may take them off gentlye with a knife, and having put them in a piece of Say or ſuch like, keep them in a covered box amongſt your woollen cloaths, or the like till the year following: But not in any moiſt room, for it is hurtfull for them, neither where there is too much heat, leſt the worms ſhould be hatched before you can have any food for them.

The making of a Wheel, as likevviſe the vvay to vvinde the ſaid ſilk from the bottomes, can hardly be ſet dovvn ſo plainly, as to be rightly underſtood: Wherefore when time ſhall ſerve, there ſhall be ſent into every County of this Kingdome, a Wheel ready made, and a man that ſhall inſtruct all ſuch as are deſirous to learn the uſe thereof: Till vvhen, I vvill commend theſe brief inſtructions to be carefully conſidered of all ſuch as are willing either to benefit themſelves or their Countrey, that being skilfull in the Contemplation, they may the readier, and vvith leſſe errour apply themſelves to Action, vvhich painfull induſtry, vvith Gods aſſiſtance, vvill quickly perfect.

Thus learned Bartas *upon this noble and admirable Creature.*

YEt may I not this *Wondrous Worm* paſſe by,
Of Fly turn'd Worm, and of a *Worm a Fly*.
Two Births, two Deaths, here Nature hath aſſign'd her,
Leaving a *Poſthume*, dead-live Seed behinde her;
Which ſoon transforms the freſh and tender leaves
Of *Thisbes* pale tree, to thoſe tender ſleaves
(On Ovall Clues) of ſoft ſmooth ſilken Flax,
Which more for us then for her ſelf ſhe makes.
O precious fleece! which only did adorne
The ſacred loins of Princes heretoforne:
But our proud age, Wits prodigall abuſe
Hath ſo profan'd the old honorable uſe:
That Shifters now, that ſcarce have bread to eat
Diſdain plain Silk, unleſs it be beſet
With one of thoſe brave Metals, whoſe deſire
Burns greedy ſouls with an impartiall fire.

Had Du Bartas *fully known all the vertues and rarities in this incomparable Creature, even a miracle in Nature, he would have inlarged his Poeme in a more ample manner in the praiſe of it, To the great honour of the Creatour:* Cui Gloria.

From a *Virginia*-Planter in *England*, to the Virgin-Lady *Virginia*.

I.

LEt me (of whose so many of our Clime
Who stand (brave Lady) in much honour bound
For your dear pains conferr'd upon the time,
Who hast for us Fame, pleasure, profit found,)
Render thee thanks, that cannot speak thy praise,
Wishing all condigne honour to thy dayes.

II.

Amongst these Lands, which sing the memory
Of their deare children (who with pious care
Have them ennobled by th'utility
Of Arts, that long unto them hidden were)
Virginia *boasts thy name in happy houre,*
Who to her Garland add'st so rich a flower.

III.

By silly Worms, which ever heretofore,
This use to keep with us hath been unknown
To draw that great abundant fleece of store,
From them by thy rare new discovery shown.

Ano-

THe glorious Silkwormes (of all Worms the best)
Of greatest use, and the most faithfullest,
Of Princes worne; By me extols thy worth,
For Blazoning of her, and setting forth
Her wonders, both in Nature, and her Works
Ador'd by th' Persian, *and their neighbouring* Turks:
Vast wealth they bring to those with little care,
Yet may with both the Indies *well compare.*
Our lazy Clime, and those that sail from hence
To blesse VIRGINIA; *(and who might long since*
Have spar'd their pains, in planting of base smoke,
Fit onely to destroy mans health, and choke
The Takers;) and instead of being fam'd,
Shall be esteem'd but base, and highly blam'd,
If longer they forbear, and do neglect
To act, what thou (sweet Cozen) dost detect:
A Virgin *thou,* VIRGINIA *is thy Name,*
Which shall unto VIRGINIA *adde more Fame;*
For thou exalt'st her Honour by thy Hand,
And mak'st the Silkworme famous in that Land.

Richard Ferrar,
ex Æde Trinitatis: Junior.

A Comparison between the gain and labour of TOBACCO *and* SILK.

TObacco requires 9 moneths time, much care and labour both without and within dores, and a mans Crop is commonly 15 hundred weight if Tobacco, and this at two pence a pound is 14 pound gain.

Silk requires six weeks time, if done in a house, and by the labour of a man and boy, in gathering leaves, and tending the wormes that come of six ounces seed, there is by so many wormes spun as much Silk as will weigh sixty pound weight, and this but at *20 shil.* a pound, yields *60 lb.* in ready money.

Tobacco leaves a man but 3 moneths in the year for other businesse.

Silk leaves a man ten moneths time in the year of any other imployments.

14 pounds a man gaines by his Crop of Tobacco.
60 pounds a man and boy gains by his Crop of Silk.

Then let all men judge which is the more gainfull.

But what will be the gain and profit by the wormes feeding and spinning on the Trees is more considerable, and also the naturall *Virginia*-wormes bottome exceeding ours in *Europe* 20 times in bigneſſe, and in weight: what a Treasure then will this be, and no labour, cost, hazard, expence of time at all, a Boy onely to keep away the Birds from eating the Silkworms on the Trees, &c.

A Rare and new discovered speedy way, and easie meanes of keeping of Silk-wormes, being thus made knowne to the Colony in *VIRGINIA.*

Harken wel, you beloved Planters, to what in these few lines I shall declare unto you; and is thus sent you in Print, that all of you may communicate the great and superlative good and benefit it will be unto every one of you: *Whoso is wise, will ponder these things*, and give the praise and glory to God, the Author of all good Inventions; how Providence having brought this to passe for all your exceeding great happinesse and increase of store of wealth, with so much ease, so little la-

bour, no cost unto you; and in so short a time as fourty daies this wealth flowes in upon you.

You now I conceive desire to know it, and I am as willing to impart it unto you: thus then in brief, in a plain manner, that all may understand it.

The way to speedy wealth, was by some hundreds of you to remove some 60 miles more South by land, and to attempt the discovery of the Westerly Sea, on the border of Virginia, and both two very easily atchieved, &c.

The Lady hath of these Silk-bottoms in her Cabinet as Jewels to convince the incredulous, they are ten times bigger then any in Europe to admiration, and of infinite incouragement to the work.

The same Lady, who last year sent you her Books of *Health and Wealth*, (who hath the happinesse to beare the honourable name of your incomparable Countrey) continuing her sincere affections to the advancing of your welfares in all kindes; and amongst the rest in this rich work of Silk, knowing *Virginia* to be in all respects most proper for it, (as by a late Book sent you, published by Mr. *Williams*,) not onely in regard of the Climate being the same with *China*, from whence the infinite quantity of silk comes, but abounding (as it doth) with Mulberry-trees naturally growing there, and exceeding it by the Silkworm-bottomes found in her Woods. She hath I say this Spring found out (by the speciall blessing of God upon her intentions) so rare, so speedy, and so costlesse a way and means for the feeding of Silkwormes; by the triall and experiment she so luckily made, to the admiration of all that have seen or heard of it, as a thing scarce credible; because not heretofore thought of, nay, as it were, held impossible by such Authours as have written of the ordering and feeding of Silkworms: that this her invention being thus made known unto you her beloved friends in *Virginia*, she is most confident, and assures herself you will all there instantly without further delay (which will be the joy of her heart) become great and rich Masters of this noble Silk-worke to all your unspeakable wealth.

Do but as she hath done; follow but with good courage your cheerfull Leader, and doubtlesse you shall finde (what she desires you may,) namely, *Great profit and pleasure* in an honest imployment. This Silken-Mine will be to you of more benefit then a Mine of silver.

In the beginning of *May* last 1652, when her young

Mul-

Mulbery-tree in her Garden began to put out its buds, then her Silkworm-eggs began to hatch, as the nature of this wise creature is, when her food begins once to appear, she comes forth of her shell: she presently laying a Mulberry-leafe upon these little crawling creatures, they came all upon it instantly; then she carried the leafe and them upon it to the tree, upon whose leaves they made haste to be; and there they day and night fed themselves, creeping from leafe to leafe, and branch to branch at their own liberties most pleasing to themselves, they grew and thrived wonderfully, and surpassed in largeness of body those other wormes she kept in her chamber (she having been many a year a Mistris of Silkworms, and kept them by the Book-rules) this good and prosperous beginning heightened her hopes. The wormes, as their nature is, cast off or slipped out of their skins four severall times, still growing greater and greater to the singular delight and content of their Mistris. About 45 dayes thus feeding upon the leaves, they began that rare and glorious work of spinning their Silk-bottomes upon the leaves and branches of the tree; such a gallant sight to behold, it ravished the Spectators, and their Mistris joy was crowned with excesse of happinesse herein and hereby, apparently finding the incomparable felicity this would prove to her dearly beloved *Virginia*, (for so you must give her leave to call it,) for she concluded, and so must all you, that this being thus effected in *England*, how much more with assured confidence will the wormes live, feed, and spin in *Virginia*? she upon serious and due consideration of this thing, gave God hearty and humble thanks.

Contrary to Book Rules. These eggs were purposely exposed to aire, cold, winde, and frost, being laid and spawned on a wal in a chamber, and there remained all Winter long to try the vertue of the Eggs, &c. And twice before they come out of their bottoms, six times in all. The seventh they appear when come out a gallant silken white-winged Fly.

And what can any of you now wish for more incouragement? the full proof is made, the work (or rather let me call it) the pleasure is effected with so much ease, so little cost, hazard or pains, as all may admire it.

No weather it seems hurts them there; from heat and rains they shelter themselvs under the great leaves as with a shield, but if either do harm them, how easie is a canvase coveting reared over the trees to save them from either of both.

'Tis not the hundreth part of your care, labour, or toyl you take about your Tobacco, and an hundred times (as I

may say) all things put together more gain and profit to you then you make by Tobacco, which in truth is but smoak and vapour, but this a reall-royall-solid-rich-staple commodity.

And yet if you will have still smoak, so this neither will nor can hinder your labour in that, or take from you any other employment you have a minde unto.

Consider, consider I pray you (beloved friends) your incomparable happinesse in this thing, and blesse God for it. Surely I should much wrong your judgements and patience, if I should spend any more arguments to perswade you to this so great benefit to you, and should be like to him that to manifest the clear Sun-shine at noon-day, brought in a candle.

In a word, there's nothing is or can be wanting but your true thankfulnesse to God for compleating this happy invention, and your present speedy putting it in practice.

Yet give me leave, before I bid you adiew, to add the incomparable joy this Lady hath, who is confidently perswaded (her daily prayers are to God for it) that this new invented way of thus keeping Silkwormes on the Trees; it requiring neither skill nor pains, (this last being the onely *Remora*, in the Savages nature, which witholds them from attempting any thing of labour) that when the Indians shall behold and see you begin the businesse, they will with all alacrity set upon it likewise, and imitate you. And that you to incourage them (as well you may) do agree with them, that for every pound-weight of Silk-bottomes they bring unto you, you give them (as well it deserves) 5 *shil.* worth in any Commodities they desire.

And thus by the blessing of Almighty God, there may be good hope of their civilizing and conversion, so that they may be likewise great gainers both in body and soul by this thing. And if this prove so, (Gods mercies and workes being far beyond our capacities) how much then indeed will *Virginia's* happinesse be every way raised to the height

of

of Bliſſe. The promiſe being made, *That they that be wiſe ſhall ſhine as the brightneſſe of the Firmament, and they that turn many to righteouſneſſe, as the ſtars for ever and ever*; which the God of wiſdome and power grant to you all in *Virginia*: and ſo, Lord, proſper this work in their hands; Lord, proſper their handy-work; good luck I wiſh you all in the name of the Lord, *Amen, Amen, Amen.*

Memorandum, that you take notice, that the Birds will eat up the Silkworms on the trees, ſo that care muſt be had (and it's eaſily prevented by ſeverall wayes and means, as you will deviſe) to ſcare away the birds; if all fail, a boy may be ſet that may affright them al away with ſome noiſe, or by nets encompaſſing the trees; and the birds will alſo carry the Silk-bottomes off the trees, if they be let there remain; but that's ſoon prevented, by taking them ſpeedily away. And this of the birds is the chief reaſon, that *Virginia* abounds not with plenty of the naturall wilde Silkworms, they devouring moſt of them: and it's a wonder how any at all eſcape them, but that God preſerves ſome few of the race, that his power and wiſdome may be ſeen, and the aptneſſe of the Countrey to invite you to the work.

It will be good for you to incourage the Savages, when they finde any bottoms in the woods, to bring them to you, that you may get of the race, and ſeed to increaſe it. Some ſay, the originall Silkworm is produced by the corruption of the old Mulberry-tree, and leaves by the Sunne and moiſture. But that none of you may want a ſtock to begin your Silk-work, the Lady aforeſaid hath ſent you ſtore of Silkworm-eggs to be diſtributed amongſt you: and if you begin but with an 100 eggs this year, they will next year be above 1000; for one female Silk-fly will lay 3, 4, 500 at a time, all things more and more concurring to your incouragement.

For their Bottom bring ten times bigger then ours, what mighty great Worm muſt they be, and what incouragement is this to the buſineſſe, and how much more ſilk they make then ours, &c.

Till you can get and gain the Egg and Seed of your naturall gallant large Silkworm: which is chiefly that you muſt endevour to ſtore your ſelves with, no Eggs comparable to it, &c.

Now the two Propoſitions that tend to infinite welfare, benefit, and wonderfull advantage both to *England* and the Colony

Colony joyntly, are those that follow, that which upon no terms are to be omitted to be published and effected.

First, that with all speed some kinde of Coyne be sent to *Virginia*, that may be authorized to passe there for their Commerce and better trading. But whether all silver somewhat valued above its worth, or part silver & part copper, is left to the wise judgments in that case. But of this confidently be assured, that without some kinde of coyn or other, that Colony can no way prosper or thrive, nor any staple commodities be set up, or Artificers in any kinde follow their professions: for Tobacco being now their money, and that with which all Commerce is driven, and paiments made in, and passeth from man to man; all men are set upon that thing with the neglect of all other rich and solid innumerable Commodities that are in that land to be had: and till this remedy of Coyne be applied, there can be no prosperity in that Colony. Were not the thing as apparent to all mens understandings as light is from darkneſſe; I should alledge many reasons for it, but it's so needlesse to spend time about it, as it might well be thought a great absurdity. What then remaines? but that some publique spirited Patriot that would immortalize his name and honour in the procuring of this so necessary a thing to be speedily effected, wherein also as the generall good he shall do, so the benefit will be ever great to those that shall undertake the carrying over this Coyne; be it what it will be, all men know it so well what the gain will be, as there's no need to name it in particular manner, they cannot wish for more profit then that will be to the undertakers, and the Colony will with all their hearts be content with it, and esteeme them happy and thrice happy Benefactours.

The second thing is, that a Publication be procured and sent to the Colony in *Virginia*, declaring unto them, that there shall be liberty for all men to bring from thence for the space of ten years to come, any commodity that they shall there raise, into *England*, Custome and Excize free,

(To-

(Tobacco onely excepted, which may pay double Custome, if so thought fit:) and further that to what value of money such commodities shall be sold for here in *England*, (being rated at the Custome-house at their entry;) it shall be lawfull to carry out to *Virginia* any Commodities again to the same proportion and worth, Custome and Excize free.

These two reasonable things granted; as they shall infinitely with all speed advance the Plantation, so shall they (all things duly weighed in the scale of prudence) be no lesse beneficiall to *England*, as all men that have their eyes in their heads, and English hearts in their bodies, see and apparantly know, nothing more sure and certain; and all staple and needfull Commodities brought out of all-liberall-*Virginia* into *England* at a very reasonable rate and price, much cheaper then now we have them, and are fain to fetch them with great hazard from doubtfull friends, or Heathen Nations, to their great enriching and our own impoverishing, as to all knowing men is most apparent; we shall be free from the usurpation of forreign Princes and States in our Estates, Lives, Liberties and shipping: and we may conclude boldly and rejoycingly, that Providence hath provided this all-sufficient Countrey of *Virginia* against these times, and to these intents, that hence we may have all we want from our own brethren, our Navy there increased to what number we please; for this incomparable land affords naturally all whate're belongs to the building and rigging of a Navy in all compleat manner from top to toe, as may be said; and by a safe, a sure, certain, easie, near at hand westerly discovery, (part by land, and part by Rivers and Seas) contract all the riches of the South-sea, the *Molocos*, *Philipines*, *China*, *&c.* by 3000 leagues neerer to us, without molestation by any Prince or Pirat, and shall not need at all to be troubled, if *Russia*, *Poland*, *Denmark*, *Sweden*, *Norway*, *Germany*, yea *France*, *Spain*, *Italy*, *Constantinople* were removed 5000 times more distant

Sir Francis Drake was An. 1577 in a Westerly Sea one the back of Virginia, in 37 degrees in opposite to the head of James Town in Virginia and he sailed from that Countrey which he called Nova Albion, in an open Sea to the Molocos and China, and so that also this way a trade may be made to those places to the back of Virginia, &c.

distant from us: for in one word, what ever these Countreys afford, either necessary or superfluous, all-sufficient *Virginia* within its limits will produce unto us. And shall there not I say then now be found a zealous Patriot, that will stand up for his Countrey, and procure these things to be done out of hand? Now God forbid; I commit the businesse to God, having done what I conceive my part is, who onely have good wishes, and daily prayers to attend this enterprize, which God prosper, *Amen*.

POSTSCRIPT.

At a friends importunity, (the former part sent to the Presse) I am thus enforced to make this Addition, and upon the great hopes that upon triall it will be found, that you may have two Silk-harvests in one six moneths time; of the eggs a second brood may be hatched in *June*, and so fed by Mulberry-leaves, though then it may be it must be in an house, that then for the promoting of such a good designe nothing of incouragement may be wanting, nor any obstructions in the businesse, under pretence of wanting needfull housing for to feed the wormes in. Thus much I will assure you,

That the slightest and simplest kinde of housing or coverture (though the books are too superstitious and ceremonious in the rules which are many that they give concerning the ordering of the worm, which are not so necessary as they pretend;) I assure you, you will abundantly content and satisfie this, though noble, yet most humble creature, even with any habitation to do her work in. And to this intent I now declare unto you, (that all excuse may be taken from you) that the poor simple people in *Italy*, *Spain*, *Languedock*, *Provence*, *&c.* do keep and feed their Silkworms in the same low earthen-floored Rooms, wherein themselves lodge and do all their household-affairs, feeding them on shelves and on tables, giving them leaves without

out any more curiosity, and they thrive and prosper with them as well as in the greatest Cities and stately chambers of the greatest rich mens Palaces.

And that in *Sicilie* and *Calabria*, the common Silk-Masters there do at time of year in the Spring, set up onely slight boarded houses in the fields round about the Mulberry-groves, and placing shelves in the inside of them, two foot one above the other to the roof, and a table all along the midst of the room, they strowing their leaves on these shelves and table, there feed their wormes, and there they spin in the room their Master lies for the space of five or six weeks time, and they have abundance of silk without more ado, and a man and a boy will tend all the worms that come of six ounces of eggs, and those wormes will spin 60 pound-weight of silk, and that but at 20 *shil.* the pound, is worth 60*lb.* in ready money, a sufficient gain to allure a man to the work I tro; but the gain by the naturall worme multiplying will farre exceed it. And I may not forget yet more that the Persian manner is to pitch up onely tents of *Canvas*, and Booths round their Mulberry-woods, and there-under they strow the Mulberry-tree-leaves on the ground: there their wormes feed and live and spin, and do well in all kindes, the Persians living also the time of five weeks in the tents. Thus all these examples do manifestly prove unto you, that very simple and slight housing and a little coverture will content the Silk-worms, and they will thrive well in them. And thus you see that very poor and slight houses in *Virginia* will do the deed. Nay rest assured that the very Savages houses built but with Poles Arbor-wise, and covered top and sides with mats, will be abundantly satisfactory to the wormes, and they will thrive in them as you shall finde upon triall. And let me tell you, being desirous that you may do all things with the least cost and labour to you, and to invite also the Savages to the work for their own gain; do but take your Reeds and small Canes in *Virginia*, and run but a strong needle

Sicily.

The great gain of the Silkworks in a house, how much more in the trees, will it be to you. The simplest and slightest houses or coverture will be sufficient for the Wormes to feed in, and live and spin, let no man doubt it, &c.

and threed thorow the Reeds which will hold them together, and so you may presently make shelves and tables with them as narrow and as broad as you please; and in truth you shall finde this kinde of shelf and tabling to feed your worms on much better in many respects then boards: but you may make triall of the Persian way also by strowing your leaves on the ground in these houses, and so feed them, and so your second brood of Silkworms may also be thus kept and nourished in this kinde of housing and coverture; Experience is the Mistris of fools, saith the Proverb: and it is not an unwise mans part often to make trials, though to some men they may seem impossibilities, yet rare and strange things have upon triall often been found out; and if you would but shew the Savages samples of all kinde of things, you should soon by them know more in a moneth what is in that Countrey to be had then you have done these 40 years; and for reward they would bring in of all kindes unto you, what they have and you desire to know, so a sudden discovery may be made of all things in that land to your infinite gain.

Concerning the winding off your Silk, this Lady hath sent you one of the wheels, so that by it all of you may make the like to do that work, so you shall want nothing to speed the work.

To conclude vvith this *Memento*, that there are nine things that appear, are of no or small difficulty to you and the Savages to enterprize, and get gain and vvealth to be, produced from these Commodities; I vvill but name them and leave them to your better judgements and thoughts.

1 This Silke, so easie, speedy, and profitable a thing.

2 The Silk-grasse naturally there grovving, vvhich to the Indians the onely labour is of putting it up, and bringing it to you at such a price; a rich Commodity if known.

3 The planting Vines, small labour, little cost, long enduring.

4 The multiplying of Cunny-vvarrens, so easie a thing, the vvool of a skin novv vvorth 8 pence, vvhich is more then the body, yet the flesh is considerable meat; the vvooll is and vvill be very vendible for this nevv Invention, not onely of these fine light hats novv sold at 15 and

20 *shil.* but the spinning of the wool, and making stockings of it as fine as those of silke.

5 The increasing of abundance of Bees for wax and honey, their food so plentifull in *Virginia*, as in no Land more, and if with an hatchet you do but slash your Pine-trees, Firre-trees, Locus, and other trees, there will store of liquor come out of them, on which the Bee will gather infinite store of honey and wax, as in *Russia* and other Countreys they do.

6 The planting of Sugar-canes, that being no more laborious then the Indian wheat, setting it, and once set in good Land they grow eight or ten years, and the Indians pains will onely be to cut them yearly down, and sell them to you.

7 That of the Cotton-tree is the like for many years, gathering of the cods of wooll from them, as we do Roses from the Rose-bushes.

8 That of Ginger soon done, the planting and the gathering of it.

9 That of grafting your Crab-trees with Apples and Pears for Sider and Perry, you knowing that a man in one day will graft an 100 stocks, and they will grow night and day, while you eat, sleep, and play, and last 100 years to your great gain and profit.

I may not further inlarge my self for the present, these are but tastes and hints for your better wits to worke on: so with a thousand good wishes, I bid you adiew.

Floreat VIRGINIA.

The fashion of the Bottome.

The Silke Bottome of the naturall Worm in *Virginia*, found there in the Woods, is ten Inches about, and six Inches in length to admiration: & whereas ours in *Europe* have their Sleave and loose Silke on the outside; and then in a more closer covering they intombe themselves. These rare Worms, before they inclose themselves up, fill with Silke the great emptinesse, and afterwards inclose themselves in the middle of it, so they have a double Bottom.

The loose Sleave Silk is all on the outside of this compasse, for if that were reckoned in, the compasse of the Bottom would far exceed this proportion: But this is sufficient to be the Wonder of the whole World: to the Glory of the Creatour, and Exaltation of *VIRGINIA*.

FINIS.